

CLAIMS

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- 1/ A cable comprising at least one optical fiber and at least one covering layer comprising a covering material including an organic compound and an inorganic compound, the cable being characterized in that said inorganic compound has a layered structure and in that said organic compound is inserted between the layers of said inorganic compound.
- 2/ A cable according to ^Aclaim 1, in which said inorganic compound is an inorganic oxide of layered structure.
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- 3/ A cable according to claim 2, in which said inorganic oxide is selected from a metal oxide of layered structure and a silicate of layered structure or "phyllosilicate".
- 4/ A cable according to claim 3, in which said silicate of layered structure is selected from mica and clay.
- 5/ A cable according to claim 4, in which said clay is selected from talc, vermiculite, kaolinite, smectite, and mixtures thereof.
- 6/ A cable according to claim 5, in which said smectite is selected from montmorillonite, bentonite, beidellite, nontronite, saponite, hectorite, and mixtures thereof.
- 7/ A cable according to claim 5, in which said clay is selected from montmorillonite and bentonite.
- 8/ A cable according to ^Aany preceding claim, in which said organic compound is selected from polymers, monomers, and oligomers.
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- 9/ A cable according to claim 8, in which said compound is a polymer selected from: polyesters, polyethers, polyvinyl ethers, polyurethanes, ~~polyurethane acrylates,~~

maleates, fumarates, polythiols, polyenes, and copolymers and mixtures thereof.

10/ A cable according to claim 8, in which said polymer is selected from: polyolefins, polybutylene-terephthalates, vinyl polymers, elastomers, silicones, and copolymers and mixtures thereof.

11/ A cable according to claim 8, in which said polymer is selected from: epoxy resins, polyesters, polyamides, polyimides, polyetherimides, polyamidimides, polyurethanes, silicones, and mixtures thereof.

12/ A cable according to any preceding claim, comprising an optical fiber surrounded by a protective coating including at least one layer constituted essentially by said covering material.

13/ A cable according to any preceding claim, including a plurality of optical fibers and an outer sheath including at least one layer constituted essentially by said covering material.

14/ A cable according to any preceding claim, comprising a bundle of optical fibers and an insulating covering having at least one layer constituted essentially by said covering material.

15/ A method of manufacturing a cable according to any preceding claim, wherein said covering material is made by the following steps:

- said inorganic compound is treated with an agent so as to ensure that it is compatible with said organic compound;

- said treated inorganic compound is mixed with said organic compound at a temperature higher than the

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· said material is obtained, said organic compound being inserted between the layers of said inorganic compound.

16/ A method according to claim 12, in which said inorganic compound is a clay and said compatibility agent is selected from quaternary ammonium salts, polyethylene oxides, and phosphorus-containing derivatives.

Figure 1. The effect of the number of iterations (n) on the accuracy of the proposed algorithm. The figure shows two plots side-by-side. The left plot shows the error norm $\|e\|_2$ versus n , ranging from 0 to 100. The right plot shows the relative error $\frac{\|e\|_2}{\|x\|_2}$ versus n , ranging from 0 to 100. Both plots show a decreasing trend as n increases, indicating convergence.